NATIONAL SCIENCE FOUNDATION
ARLINGTON, VA 22230

Engineering Directorate
Division of Design, Manufacture & Industrial Innovation

Report of the
Advisory Committee for
Small Business Innovation Research (SBIR) and
Small Business Technology Transfer (STTR)
Programs

for the Meeting on
17 and 18 June 2003

A.   INTRODUCTION

The National Science Foundation (NSF) Advisory Committee (AdComm) for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs was held 17 and 18 June 2003 in Room 1235 of the NSF Headquarters facility in Arlington, VA.

Advisory Committee members in attendance were:

> Dr. Chris Busch (Chairman)
> Dr. Sudhir Bhagwan
> Dr. Nariman Farvardin
> Ms. Penny K. Pickett
> Mr. Michael Sheridan
> Dr. David B. Spencer
> Mr. Milton Stewart
> Mr. Maurice Swinton
> Dr. E. Jennings Taylor
> Dr. Carole A. Teolis
> Dr. Lizette Velazquez
> Dr. Billy M. Williams
> Ms. Meg Wilson

Advisory Committee members absent:

> Dr. Robert Norwood

NSF representatives attending all or part of the meeting included:

> Ms. Cheryl Albus, SBIR Program Manager
> Ms. Jennifer Beckett, Meeting Planner
> Dr. John Brighton, Assistant Director, Engineering Directorate
> Mr. Ritchie Coryell, SBIR Program Manager
> Dr. Juan E. Figueroa, SBIR Program Manager
> Dr. Joe Hennessey, Senior Advisor, SBIR Program
> Ms. Sonya Lucas, DMII Division
> Dr. Elbert L. Marsh, ENG Directorate
> Dr. Murali Nair, SBIR Program Manager
> Dr. Kesh Narayanan, Acting Director, Industrial Innovation
> Dr. Sara B. Nerlove, SBIR Program Manager
> Ms. Betty Person, Program Specialist
> Dr. T. James Rudd, SBIR Program Manager
> Dr. Om Sahai, SBIR Program Manager
> Dr. Winslow Sargeant, SBIR Program Manager
> Dr. Kip Thompson, SBIR Program Expert

Dr. Rosemarie Wesson, SBIR Program Manager

Other Participants and Attendees

Mr. Neil MacDonald, Federal Technology Report
Ms. Joan Stewart, SBHTI
Mr. Jack Yadvish, NASA

B.   ACTIVITIES SUMMARY

Tuesday, 17 June 2003

Kesh Narayanan opened the meeting, and introduced Dr. John Brighton (NSF Assistant Director, Engineering Directorate) who addressed the meeting briefly.

Kesh Narayanan then gave the AdComm an orientation to NSF and its SBIR/STTR Programs. He presented information from the recently published draft NSF Strategic Plan. He reviewed NSF SBIR/STTR Program Office personnel changes, and introduced new members of the team. Advisory Committee members and other participants at the meeting then introduced themselves.

Kesh Narayanan reviewed the planned agenda for the AdComm meeting, and then turned the meeting over to Chris Busch.

The reports from the 18 and 19 June 2002 (NSF Headquarters) and 8 January 2003 (Birmingham, AL) AdComm meetings were approved without dissent. They had been distributed to AdComm members for review before this meeting.

Chris Busch reviewed highlights from the two previous NSF SBIR Committee of Visitors (COV) meetings (16 & 17 April 1998 and 7 & 8 May 2001). Kesh Narayanan encouraged AdComm members to nominate participants for the next NSF SBIR COV planned for early 2004.

Chris Busch then reviewed the recent Engineering Directorate AdComm meetings and his participation in them. The last of these was held 29 & 30 May 2003, and the next is planned for 9 & 10 October 2003.

Joe Hennessey provided NSF SBIR/STTR Program highlights, including information on recent proposal submissions and award selections. His comments included ongoing outreach activities, commercialization considerations in Phase 1 and Phase 2, allowable costs and administrative issues.

Joe Hennessey reviewed specific actions being taken to address the Phase 1 proposal evaluation process. He cited the current limit of 4 proposals per small business per solicitation period, and the pilot Phase 1 contract-screening project for which two contractors have been selected (Lytmos and The Gervin Group). He discussed a range of potential uses of this screening method, including the possibility of evaluating Phase 1 proposals exclusively by this method. He invited comments on this approach.

Maurice Swinton (SBA Technology Office) reviewed the SBIR & STTR Policy Directives and key provisions in them.

Joan Stewart introduced the SBIR historical display assembled by the Small Business High Technology Institute (SBHTI). The display is titled "A Quarter of a Century of Progress." During the luncheon break, meeting participants walked through the display and interacted with Milt and Joan Stewart.

Joe Hennessey began the afternoon session with a discussion of "Phase 2 Options." The specific problem he addressed is Phase 2 proposals that have good commercialization plans, but have not fully demonstrated Phase 1 technical feasibility. He suggested the possibility of a Phase 1 "supplement," and solicited guidance from the AdComm on how to proceed.

Dr. Hennessey then reviewed plans for the "super sized" Phase 2B in which NSF would provide up to $500K of NSF funds on a 1 to 2 match basis ($1 of NSF funds to $2 of private sector third party funds). Implementation of this plan would commence in FY 2004.

Kesh Narayanan and James Rudd reviewed the Matchmaker Program. Kesh Narayanan cited less response from small businesses than expected (only 12 small businesses enrolled, 23 investors signed up). James Rudd reviewed his plans to interest large businesses as strategic partners in the Matchmaker opportunity. Inputs were solicited from the AdComm on enabling improvements for Matchmaker.

Meg Wilson reported on a subcommittee work on NSF partnerships with state organizations. The report included specific recommendations for NSF.

Maurice Swinton reviewed the SBA Federal and State Technology (FAST) Partnership Program, and the SBA Rural Outreach Program.

Jack Yadvish reported on NASA commercialization measurements.

Ritchie Coryell reported on the mandated National Research Council (NRC) study of the SBIR Program. Considerable concern was expressed by meeting participants about the direction of the NRC study, and input on commercialization to the study by selected small businesses. Ritchie Coryell also reported on commercialization measurements he has done on NSF SBIR projects.

At the end of the day, items for inclusion in the AdComm report were identified, and plans made for report preparation on Wednesday 19 June 2003.

<u>Wednesday, 19 June 2003</u>

The AdComm as a group prepared a draft report on the meeting. The draft report was presented to NSF representatives by AdComm members commencing at 1:30 PM in the afternoon.

The AdComm recessed from its work in the morning to join the NSF Director's Awards Ceremony that included awards to three NSF SBIR/STTR Program Managers (Cheryl Albus, Om Sahai and Winslow Sargeant).

The meeting adjourned at approximately 3:00 PM.

C.   COMMENTS ON NSF ACTIONS SINCE LAST ADCOM MEETINGS (JUN 2002 & JAN 2003)

The AdCom commends the NSF leadership and staff for significant progress in responding to the AdComm's recommendations made at the 18 & 19 June 2002 and 8 Jan 2003 meetings. Specific comments and recommendations based on presentations and discussions at this (17 & 18 June 2003) AdComm meeting are presented below.

D.   COMMENTS AND RECOMMENDATIONS

The items below are listed in the order of priority as viewed by the AdComm.

1.   NSF Commercialization Process and Measurements

The AdComm strongly supports the NSF SBIR/STTR Program emphasis on commercialization. It is recommended that the NSF SBIR/STTR Program Office place increased emphasis on providing a clearer picture of commercialization case studies and history, current directions, commercialization cycle times and metrics. The AdComm believes that reallocation of resources and different organizational emphases are needed to enable the generation of this picture.

2.   NRC Study

The AdComm is concerned about the apparent direction that the NRC SBIR study is taking. The AdComm strongly encourages NSF to be proactive in providing commercialization information and support to the NRC study. This includes new commercialization directions at NSF.

The AdComm recommends that an AdComm NRC Task Force be formed to impact the NRC study. Task Force functions would include interactions with the NRC study team, SBA and appropriate congressional personnel. Kesh Narayanan noted that AdComm member interactions with congressional personnel should be done as individuals, not as members of the NSF SBIR/STTR AdComm. The following AdComm members volunteered to serve on this subcommittee: Dave Spencer, Jennings Taylor, Meg Wilson and Chris Busch.

3.   SBIR/STTR Advocacy

The AdComm is concerned about the long-term viability of the SBIR/STTR Programs, both at NSF and agency wide. The AdComm believes that the NSF has made great strides to improve the outcomes of the Program, and believe the NSF SBIR/STTR Programs have a number of best practices (including commercialization) that should be shared with other agencies. The AdComm recommends that NSF SBIR/STTR Program representatives continue to work closely with interagency SBIR/STTR working groups. The AdComm also recommends a greatly increased effort from the press office within NSF to solicit, prepare and present a series of "success stories" to illustrate and personalize the impact of SBIR/STTR grants.

Within NSF, AdComm representatives will advocate the SBIR/STTR Programs, including within the Engineering AdComm.

Milt Stewart made a strong case that the AdComm should advocate stronger central leadership for the government wide SBIR/STTR Programs.

4.   Matchmaker

The AdComm recommends that NSF continue with the Matchmaker Program. The AdComm endorses recruiting strategic partners in addition to Venture Capitalists for Matchmaker. It is recommended that Matchmaker be introduced to small businesses as early as Phase 1. Preparation and education of awardees about current business realities and benefits of the matchmaking process should be a component of this activity. Key characteristics of awardees and their technology and reservations about Matchmaker should be captured to facilitate the matchmaking process. Website material should be reviewed and improved to be more accommodating of small businesses. NSF should review practices at other agencies in bringing small businesses together with investors and strategic partners.

5. Phase 1 Proposal Review Process

The AdComm recognizes the need to free up Program Manager time to "coaching" and other higher value activities, and that screening mechanisms and practices would enable this.

The AdComm believes the practice of limiting the number of proposals for a small business for each solicitation cycle has merit. However, the AdComm recommends that NSF justify its approach on limiting proposals, and reconcile its practice with existing policies and legislation.

The AdComm encourages pursuing the pilot screening project to review Phase 1 proposals. However, the AdComm strongly recommends that NSF insure the quality and integrity of the contractor screening process before expanding the pilot screening approach. The AdComm believes that risks associated with the contractor review process (e.g., conflict of interest, quality reviewers) should be carefully considered.

The AdComm recommends that NSF revisit the approach of using "screening panels" to screen proposals as discussed in previous AdComm meetings.

6. Phase 1 Project Changes and Phase 2 Review Process

For cases where Phase 1 objectives are not likely to be fully achieved, the AdComm recommends that the NSF Program Managers be given the flexibility to alter the Phase 1 objectives and statement of work during Phase 1 to accommodate a different approach that may enable feasibility demonstration. In cases where feasibility was not fully demonstrated in Phase 1, but the proposal commercial potential is strong, the AdComm recommends that the Program Managers be given the flexibility to select the Phase 2 proposal for award "with revisions" to the technical proposal.

The AdComm recommends against using the Phase 1 "supplement" approach suggested in Joe Hennessey's presentation.

The AdComm recommends that the Phase 2 evaluation process include personal presentations by the proposing team to the Phase 2 panel or Program Managers, along with a question and answer session.

7. Super-Size Phase 2B

The AdComm recommends that NSF proceed with the "super-sized" Phase 2B Program as presented to the AdComm.

8. Principal Investigator Change

The AdComm recommends that NSF exercise flexibility in allowing a change in Principal Investigator (PI), including cases where a PI change is requested after proposal submission but before award selection. NSF should be receptive to the small business offering an equal or superior PI as a replacement.

9. Allowable Costs

The AdComm recommends that NSF policy give small businesses the opportunity to treat at-risk work performed after proposal submission before award as an allowable cost for both Phase 1 and Phase 2. (David Spencer supported this approach for Phase 2, but expressed reservations about using it for the Phase 1.)

10. Online Outreach

In releasing the award information on FastLane, the AdComm recommends that the name and contact information be provided for a business official.

The AdComm recommends that NSF consider development of online and virtual learning courses, including overview of SBIR/STTR competition, accounting, investment, banking, marketing, etc.

11. Partnerships with States

The AdComm applauds NSF's outreach activities, and encourages that this work be continued.

The AdComm recommends that NSF respond to outreach "pull" scenarios from states.

The AdComm recommends that NSF give careful consideration to the suggestions included in the presentation by Meg Wilson at the AdComm meeting on 17 Jun 2003. The summary recommendations were:

    Seek ubiquitous links to states
    Concentrate on best practices knowledge transfer
    Concentrate on web info
    Increase outreach on STTR
    Initiate private sector outreach

Finally, the AdComm recommends that the NSF SBIR/STTR Program Office post on its website the number of awards and proposals for each closing date and for each state.

This information is highly useful to outreach personnel throughout the country, and should be readily available.

12. AdComm Meeting Format

The AdComm recommends that the meeting format allow more interactive discussions between AdComm members and NSF representatives during presentations.

The AdComm recommends that NSF distribute presentation materials approximately one week before the meeting for AdComm member review.

In preparation of the materials, the AdComm recommends that presentation material content highlight issues where action/advice from the AdComm is desired by NSF.

END OF REPORT